

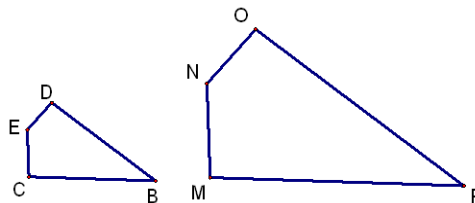
7-2 Similar Polygons

~ similar

Two polygons are ~ if

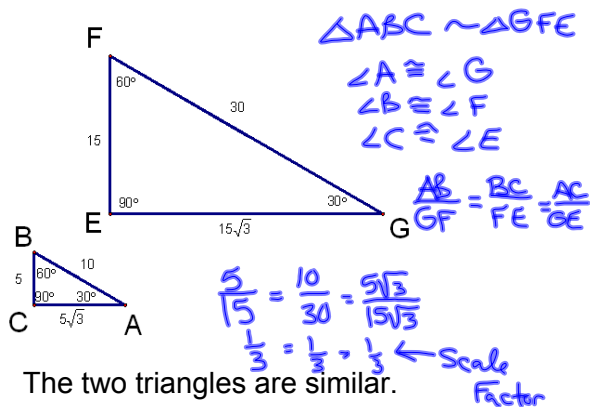
1. corresponding \angle s are \cong
2. corresponding sides are proportional

The two figures are similar.

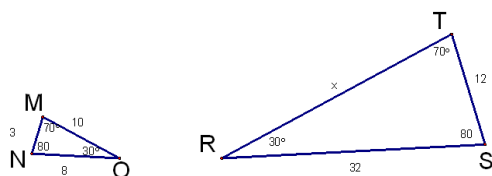


Write a similarity statement.

$CBDE \sim MPON$



Scale factor--ratio of the corresponding sides



$\triangle MNO \sim \triangle TSR$

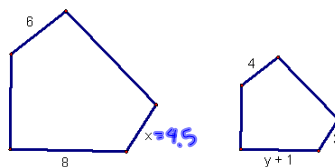
Scale Factor? $\frac{3}{12} = \frac{1}{4}$

$$\frac{x}{10} \times \frac{12}{3}$$

$$3x = 120$$

$$x = 40$$

The pentagons are similar.
Solve for x and y.



$$\frac{x}{3} = \frac{6}{4.5}$$

$$4x = 18$$

$$x = 4.5$$

$$\frac{y+1}{8} = \frac{3}{4.5}$$

$$4.5(y+1) = 24$$

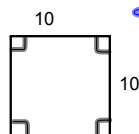
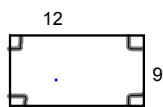
$$4.5y + 4.5 = 24$$

$$4.5y = 19.5$$

$$y+1 = 4.3$$

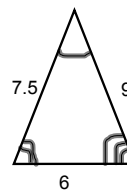
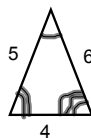
$$y = 3.3$$

Are the following figures similar?



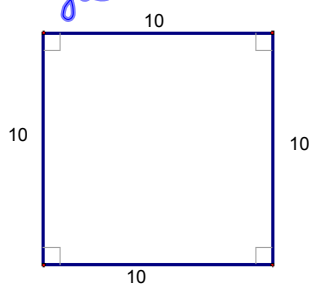
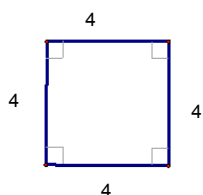
No
Angles same? yes
Sides prop.? No
 $\frac{12}{10} \neq \frac{9}{10}$

Are the following figures similar?



yes
Angles same? yes
Sides prop.? yes
 $\frac{5}{7.5} = \frac{6}{9} = \frac{4}{6} = \frac{2}{3}$
 $\frac{5}{7.5} = \frac{6}{9} = \frac{4}{6} = \frac{2}{3}$

Are the following figures similar?



yes

Theorem 7.1--Perimeters of Similar Polygons

If 2 polygons are similar, then the ratio of their perimeters is equal to the ratio of their corresponding side lengths.

ex:

 $\triangle ABC \sim \triangle DEF$

The scale factor is 4/5.

The perimeter of $\triangle ABC$ is 12cm.What is the perimeter of $\triangle DEF$?

$$\frac{4}{5} = \frac{12}{x}$$

$$x = 15\text{cm}$$

HW

p368-370

3, 5-7, 17-20

Different from sheet